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EG&G — ROCKY FLATS PLANT
ENVIRONMENTAL MANAGEMENT DEPARTMENT
ROCKY FLATS PLANT
EMD OPERATING PROCEDURE Stamp
PROCEDURES MANUAL

Manual No.: 5-21000-OPS-AP
Procedure No.: Table of Contents, Rev 3
Page: 1 of 2
Effective Date: 07/24/92
Organization: Environmental Management

THIS IS ONE VOLUME OF A SIX VOLUME SET WHICH INCLUDES:

VOLUME I: FIELD OPERATIONS (FO)
VOLUME II: GROUNDWATER (GW)
VOLUME III: GEOTECHNICAL (GT)
VOLUME IV: SURFACE WATER (SW)
VOLUME V: ECOLOGY (EE)
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ADMIN RECORD

A-SW-001048

DOCUMENT CLASSIFICATION REVIEW WAIVER
PER R.B. HOFFMAN, CLASSIFICATION OFFICE
JUNE 11, 1991

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ENVIRONMENTAL MANAGEMENT DEPARTMENT

**ROCKY FLATS PLANT
EMD OPERATING
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Manual No.: 5-21000-OPS-AP
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EG&G - ROCKY FLATS PLANT PROCEDURE CHANGE NOTICE (PCN)

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Procedure Number

5-21000-OPS AP.03

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Title	EFFLUENT AIR RADIOPARTICULATE SAMPLE COLLECTION	Date	2-28-92	PCN Number	AP.03-92-01
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URGENT Expires: 5-28-92

TEMPORARY Expires: _____

Item Number	Page	Step or Paragraph	Changes (Use PCN CONTINUATION SHEET for additional space)
1	2	3.2.10	(add these items) EM Department Administrative Procedures Manual, 3-21000-ADM-17.01, <u>Records Management</u>
2	2	3.2.11	EM Department Operations Procedures Manual, 5-21000-OPS-FO.02, <u>Field QA Records Transmittal</u>
3	3	4.3	• Tweezers
4	5	6.1.4	(change these items) Count out the number of particulate filters required for the sample route. The PA (Hotside) requires 96 filters. The non-PA (coldside) requires 38 filters.
5	6	Caution	(revise to state) Make certain all but one particulate filter is in a brass ring to avoid cross-contamination during the sample collection procedures. The extra filter shall be placed in a glassine envelope. That filter shall be labeled "559-4".
6	7	6.1.19	(add this step) 5) Obtain the glassine envelope with the special filter marked "559-4" and place it with the sample carrier tubes.

Justification (Reason for change - Provide numbers to reference corresponding items above.)

These changes are necessary to allow operation of a new isokinetic filter system in Building 561

Concurrence	Organization	Req.	Date	Concurrence	Organization	Req.	Date
<i>[Signature]</i>	QA/DOES	X	2/24/92	<i>[Signature]</i>	User	X	2/25/92
<i>[Signature]</i>	H&S Eng.	X	2/19/92		P&C		
	Waste Cert.				ES & TS		
	Traffic			<i>[Signature]</i>	Other ECR	X	3/2/92

13. Approval of Responsible manager

[Signature]

14. Date

3/2/92

15. Is Posting required?

Yes

16. If Yes, by what date

3/2/92

17. Date posted

3/2/92

Procedure no.		Title	
5-21000-OPS AP.03		EFFLUENT AIR RADIOPARTICULATE SAMPLE COLLECTION	
Item Number	Page	Step or Paragraph	Changes (Use PCN CONTINUATION SHEET for additional space)
7	7		(revise to state) 6) Verify that you have two sample carrier tubes (one carrier for Route EA and one carrier for Route EB), and one glassine envelope.
8	10	6.2.12	(revise to state) Unscrew the filter holder cap and separate the holder exposing the particulate filter. If the filter holder is a plunger type, pull out the plunger to expose the particulate filter.
9	10	6.3.1	(revise to state) Remove the brass ring and particulate filter from the sample holder. If the filter housing is a plunger type, remove the securing ring and then remove the filter media with the tweezers.
10	11	6.3.2.1	(revise to state) If the count rate is less than 2500 cpm, place the sample (still in the brass ring) into the top of the of the sample carrier tube. If the sample holder is a plunger type, use the tweezers to place the sample into the glassine envelope.
11	11	6.3.4	(revise to state) Remove the new replacement brass ring and particulate filter from the sample carrier tube. If the sample holder is a plunger type, use the tweezers to remove the replacement filter from the glassine envelope.

Justification (Reason for change - Provide numbers to reference corresponding items above.)

PROCEDURE CHANGE NOTICE (PCN)
(Continuation Sheet)

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Procedure no.		Title	
5-2100-OPS AP.03		EFFLUENT AIR RADIOPARTICULATE SAMPLE COLLECTION	
Item Number	Page	Step or Paragraph	Changes (Use PCN CONTINUATION SHEET for additional space)
12	12	6.3.6	(revise to state) Install the new particulate filter and brass ring into the sample holder, ensuring the stamped side is visible. If the filter holder is a plunger type, install the new filter in the filter housing using the tweezers. Replace the filter securing ring.
13	12	6.3.7	(revise to state) If the filter has been damaged during this process, go to step 6.3.5.1; otherwise screw the sample holder cap and the sample holder body together or carefully slide the plunger type filter housing into the housing chamber. Be sure not to displace the O-ring when replacing the sample holder cap.
14	19	Attachment 1	Revise the attachments as indicated
15	27	4	
16	28	4	

Justification (Reason for change - Provide numbers to reference corresponding items above.)

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EMD OPERATING PROCEDURE
MANUAL

Manual: 5-21000-OPS
Section: AP.03, Rev. 0
Page: 1 of 31
Effective Date: 09/15/91
Organization: EMD

Category 3

TITLE:
EFFLUENT AIR RADIOPARTICULATE
SAMPLE COLLECTION

Approved By

M. B. [Signature]
Director, Environmental Management

9/13/91
Date

1.0 PURPOSE

This procedure establishes the activities for exchanging radioparticulate filtration media/samples at effluent air sampling locations.

2.0 SCOPE

This procedure applies to site wide activities for exchanging particulate filter sampling media from effluent exhaust systems venting to the atmosphere. Specifically, this procedure addresses (1) sample preparation, (2) sample collection, and (3) sample disposition.

3.0 REFERENCES

3.1 Source References

3.1.1 DOE Order 5480.11, Radiation Protection for Occupational Workers.

3.1.2 DOE Order 5400.5, Radiation Protection of the Public and the Environment.

3.2 Internal References

3.2.1 Health and Safety Practice Manual

REVIEWED FOR CLASSIFICATION
By G. A. MOSLER
Date 9/13/91 u

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- 3.2.2 HSP 2.04, "Employees Working Alone."
 - 3.2.3 HSP 6.07, "Radiation Work Permit."
 - 3.2.4 HSP 18.02, "Personnel Contamination Control Requirements for Radiologically Controlled Areas."
 - 3.2.5 HSP 18.08, "Use of Step-Off Pads and H&S Barrier Areas in Radiologically Controlled Areas."
 - 3.2.6 HSP 18.09, "Self Monitoring - Combo Hand-and-Foot Monitors and Alpha-Mets."
 - 3.2.7 HSP 18.12, "Radioactive Contamination and Decontamination."
 - 3.2.8 ROI 6.1, "Performance Tests and Operational Checks for Ludlum Model 12-IA and 31 Survey Instruments."
 - 3.2.9 Conduct of Operations Manual (COOP)
- | SEE PCN AP.03-92-01, ITEMS 1 and 2
- 4.0 PREREQUISITES
 - 4.1 Personnel performing the work described in this procedure will have received the required training and have a current building indoctrination for each building in which the work will be performed.

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4.2 Environmental Monitoring & Assessment Technologists (EMATs) will receive on-the-job training and general instruction in the execution of their job responsibilities.

4.3 Obtain equipment, supplies and documentation of qualifications required for the sample collection:

- Calibrated, Ludlum 12-1A instrument
- Prestamped samples in tube carriers (PA) or glassine envelopes (non-PA)
- 10 Extra glassine envelopes
- Surgeon's gloves
- Respiratory protection
- Respirator card
- Building indoctrination card
- Hazardous waste card
- Exemption badge for PA
- Appropriate (see Attachment 3 or 4) PA and Non-PA Effluent Traveler and Chain-of-Custody (ETCC) Sheets
- 10 extra filter media

SEE PCN AP.03-92-01, ITEM 3

5.0 LIMITATIONS AND PRECAUTIONS

5.1 Two personnel are required to perform this procedure one of which shall be a qualified EMAT. EMD is responsible for the indoctrination and the hands-on environmental training and qualification of EMATs.

- 5.2 Filter media will be exchanged on the following schedule:
- On Monday or Thursday, the sample route is PA (Hotside).
 - On Tuesday or Friday, the sample route is nonPA (Coldside).
- 5.3 Any deviation from the normal collection frequency shall be specified by the EMD Program Manager, in writing. These deviations from the normal collection frequency typically occur during holidays, shutdowns, or other nonroutine periods of operation.
- 5.4 The filters delivered to the labs at the beginning of each month must be of the same lot number as the filters that will be used for sample collection during the month. This allows the labs to establish the background materials present in the filter media.
- 5.5 During all activities, exercise due care to assure that the filter media is not damaged during performance of this procedure.
- 5.6 A pre-evolution briefing shall be held in accordance with COOP 11, at which, performance of this procedure was authorized.

6.0 PROCEDURE

NOTE

Particulate filter - The 47 mm glass microfibre particulate filter media (EPM-2000) manufactured by Whatman International Limited. The particulate filter is available through M&S (M&S cat. # is 014 03 08 01) or through Baster Scientific (cat. # F-2836-4).

6.1 Sample Preparation and Set-up

- 6.1.1 At the beginning of each month, deliver five boxes of EMP-2000 Whatman particulate filters to the Radiological Health Laboratory.

NOTE

The filters delivered to the labs must be of the same lot number that will be used for sample collection during the month.

- 6.1.2 Follow the filter media/sample exchange routine route designated in writing by the EMD Program Manager.

- 6.1.3 Obtain particulate filters, #EPM-2000, with the same lot number as those delivered to the Radiological Health Lab in 6.1.1.

SEE PCN AP.03-92-01, ITEM 4

- 6.1.4 Count out the number of particulate filters required for the sample route. The PA (Hotside) requires 95 filters. The non-PA (Coldside) requires 38 filters.

- 6.1.5 Inspect each particulate filter and determine the rough side versus the smooth side.

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- 6.1.6 Locate a clean, flat surface that is free from possible radioactive contamination as determined by RPT survey.
- 6.1.7 Lay the particulate filters on the flat surface smooth side down, rough side up.
- 6.1.8 Obtain a hand-held numerical stamping machine.
- 6.1.9 Stamp each particulate filter with a corresponding "sampler number" for each sampler location. The numbers must be centered on the particulate filter. (see Attachments 3, 4, and 5).
- 6.1.10 Obtain a date stamper, and set the date for the next sample start period.
- 6.1.11 Stamp each particulate filter with the start date at the top of the particulate filter. The "date on" is the date of installation.
- 6.1.12 Determine the date of the next sample collection period. The "date off" is the date the particulate filter is to be collected.
- 6.1.13 Set date stamp to the scheduled "date off".
- 6.1.14 Stamp each particulate filter at the bottom with the "date off".

SEE PCN AP.03-92-01, ITEM 5

CAUTION

Make certain each particulate filter is in a brass ring to avoid cross-contamination during the sample collection procedures.

- 6.1.15 Obtain brass ring filter holders from supply cabinet.

- 6.1.16 Inspect brass ring filter holders and determine grooved surface of inner edge side.
- 6.1.17 Place each brass ring on the desk, grooved side up.
- 6.1.18 Place the particulate filter for each sampler location into the brass rings with the stamped side up.

NOTE

Routes EA and EB (see Attachments 3 and 4) should be put in their own sample carrier. Do not mix up the routes.

- 6.1.19 If preparing PA samples, take the following steps:
1. Obtain two sample tube carriers.
 2. Load the sample tube carriers by the normal route sequence. The first sample location ("route sequence" number as specified in Attachments 3, 4, and 5, as appropriate) should be loaded in the sample tube carrier first.
 3. Place the loaded brass ring (with the particulate filter) into the sample carrier tube, stamped side up.
 4. Repeat the steps 2 and 3 (6.1.19) placing the loaded brass ring into the sample carrier tube, until all particulate filters in brass rings for each sample location are loaded into the sample carrier tubes.

SEE PCN AP.03-92-01, ITEMS 6 and 7

- (6.1.19) 5. Verify that you have two sample tube carriers (one carrier for Route EA, and one carrier for Route EB).

6.1.20 If preparing non-PA samples (Route EC, Attachment 5), take the following steps:

1. Obtain a supply of glassine envelopes (at least 38 envelopes).
2. Place the particulate filter for first sampler location into a glassine envelope.
3. Place the particulate filter for the next samples location into a glassine envelope and stack on top of the first glassine envelope.
4. Repeat step 2 placing the particulate filters into the glassine envelopes, until all particulate filters are loaded into glassine envelopes and are stacked, first location on bottom to last location on top.

6.2 Sample Collection

NOTE

1. Attachment 1 shows the PA sampling locations.
2. Attachment 2 shows the non-PA sampling locations. Completion of the balance of this procedure requires the use of ROI 6.1.
3. Ensure that the Radiation Work Permit is completed before entering an RCA per HSP 6.07

- 6.2.1 Obtain equipment and supplies.

- 6.2.2 Performance check a Ludlum 12-1A in accordance with ROI 6.1.
- 6.2.3 Record the (unique) data sheet number on the Effluent Traveler and Chain of Custody (ETCC) sheets and print your name on the bottom of page 1 of the sheets. The number is provided by your supervisor or use "ETCC-" followed by your initials, the date (in MMDDYY format), and then the number of ETCCs you have generated this day (e.g., ETCC-JWS 051591-2).
- 6.2.4 Go to the first or next building/location on the sample route, utilizing existing security procedures to access controlled areas as identified in Attachments 1 and 2.
- 6.2.5 Place the sample carrier tube samples into the security box, should a clothing change be required.
- 6.2.6 Change into company-furnished clothing per H&S Manual Procedure 18.02, as necessary, to satisfy clothing requirements.
- 6.2.7 Remove the sample carrier tube samples from the security box.
- WARNING**
- Follow the H&S procedures for exiting the controlled area.**

6.2.8 Proceed to the first sampler location.

6.2.9 Don surgeon's gloves. (This step may be done prior to this point.)

SEE
PCN AP.03-91-01

~~6.2.10 Don respiratory protection. (This step may be done prior to this point.)~~

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- 6.2.11 Performance check a Ludlum 12-1A in accordance with ROI 6.1, to verify that the instrument is functioning properly.

SEE PCN AP.03-92-01, ITEM 8

- 6.2.12 Unscrew the filter holder cap, and separate the holder exposing the particulate filter.

- 6.2.13 Using the Ludlum's probe, check the particulate filter for radioactive contamination and record the count.

CAUTION

When removing the sample media from the samplers, exercise extreme care and avoid touching the particulate filter and risking cross-contaminating subsequent samples.

- 6.2.14 Remove filter media.

- 6.2.15 If non-PA samples are being collected go to Section 6.4. If PA samples are being collected go to Section 6.3.

6.3 PA Sample Exchange

NOTE

Effluent Traveler and Chain of Custody sheets exist for each half of the PA Route. The first half of the PA route (Route EA) is covered by Attachment 3. The second half of the PA route (Route EB) is covered by Attachment 4. These route sections may be done separately. Effluent volumes are only recorded for the first sample at a location, since all the samplers at a location are on the same vacuum system.

SEE PCN AP.03-92-01, ITEM 9

- 6.3.1 Remove the brass ring and particulate filter from the sample holder.

6.3.2 Inspect and survey the particulate filter with the Ludlum 12-1A. If the filter is damaged, note that fact on the traveler as a comment.

SEE PCN AP.03-92-01, ITEM 10

6.3.2.1 If the count is above 2500 cpm, place the particulate filters into glassine envelopes instead of the sample tube carrier.

6.3.2.2 If the count rate is less than 2500 cpm, place the just removed sample into the top of the sample tube carrier.

6.3.3 Check hands for possible contamination and change surgeon's gloves as necessary.

SEE PCN AP.03-92-01, ITEM 11

6.3.4 Remove from the bottom of the sample tube carrier the new replacement brass ring and particulate filter.

6.3.5 Verify that the new filter's location number corresponds to the actual sampler location and that the filter is not damaged.

6.3.5.1 If the filter is damaged, record the sample location number on a new filter and use this filter to replace the one in the brass ring.

6.3.5.2 If the new filter is not the correct location, locate the correct new filter in the carrier tube.

6.3.5.3 If the filter is not in the carrier tube and a replacement cannot be delivered, reinstall the original filter, exit the area and replace the filter later in accordance with Section 5.3

6.3.5.4 If a replacement can be delivered, verify that Section 6.1 has been performed for the replacement filter and then perform steps 6.2.9 through 6.2.15.

PCN AP.03-92-01, ITEM 12

6.3.6 Install the new particulate filter and brass ring into the sample holder with the stamped side visible.

CAUTION

Use due care in tightening the holder to ensure that the filter is not damaged.

PCN AP.03-92-01, ITEM 13

6.3.7 If the filter has been damaged in this process, go to step 6.3.5.1; otherwise screw the sample holder cap and sampler holder body together.

6.3.8 Check hands on the Ludlum instrument for possible radioactive contamination and change surgeon's gloves if necessary.

6.3.9 Visually verify if a flow totalizer is present. (Flow totalizer are not installed on all of the effluent systems. The PA Effluent Traveler and Chain of Custody Sheets will have shaded cells in the Effluent Volume column if there is no flow totalizer.)

6.3.9.1 If there is a flow totalizer and if this is the first sample at this location visually check the volume totalizer, display reading.

6.3.9.2 If there is a flow totalizer and if this is the first sample at this location, record the totalizer display reading on the PA Effluent Traveler and Chain of Custody Sheet.

- 6.3.9.3 If there is a flow totalizer and if this is the first sample at this location, press the volume totalizer reset button to zero the volume totalizer display.
- 6.3.10 Inspect associated tubing, piping, and valving for possible maintenance problems.
- 6.3.11 Make notations on the PA Effluent Traveler and Chain of Custody Sheet of number of samples collected and any abnormal occurrences during sample collection. Example: volume totalizer sticking, maintenance requirements, safety related problems, sampler inaccessibility, etc.
- 6.3.12 Go to the next sample location/building, if any.
- 6.3.13 Repeat steps 6.2.4 to 6.2.15 and the supporting section 6.3.
- 6.3.14 Review the PA Traveler and Chain of Custody Sheets (see Attachments 3 and 4) for accuracy and completeness.
- 6.3.15 If corrections to the sheets are necessary draw a single line through the incorrect information and record the correct information, then initial and date the change.
- 6.3.16 Sign and date the sheets verify the accuracy of the sheets per the requirements of this procedure to this point.
- 6.3.17 Go to section 6.5.

6.4 Non-PA Sample Exchange

NOTE

The Effluent Traveler and Chain of Custody sheet for the Non-PA route (Route EC) is Attachment 5. Effluent volumes are only recorded for the first sample at a location since all the samplers at a location are on the same vacuum system.

- 6.4.1 Remove the appropriate new replacement brass ring and particulate filter from its glassine envelope.
- 6.4.2 Remove the brass ring and particulate filter from the sample holder.
- 6.4.3 Place the brass ring and particulate filter from the sample holder into the glassine envelope.
- 6.4.4 Check hands for possible contamination and change surgeon's gloves as necessary.
- 6.4.5 Verify that the new particulate filter's location number corresponds to the actual sampler location.
 - 6.4.5.1 If the new filter is not the correct location locate the correct new filter and put incorrect filter in envelope after removing the correct one.
 - 6.4.5.2 If the filter is not in the carrier tube and a replacement cannot be delivered, reinstall the original filter, exit the area and replace the filter later in accordance with Section 5.3

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- 6.4.5.3 If a replacement can be delivered, verify that Section 6.1 has been performed for the replacement filter and then perform steps 6.2.9 through 6.2.15.
- 6.3.6 Install the new particulate filter and brass ring into the sample holder with the stamped side visible.
- 6.4.7 Screw the sample holder cap and sample holder body together.
- 6.4.8 Check hands on the Ludlum instrument for possible radioactive contamination and change surgeon's gloves if necessary.
- 6.4.9 Visually determine if there is a flow totalizer. (Flow totalizers are not installed on all of the effluent systems. The Non-PA Effluent Traveler and Chain of Custody Sheets will have shaded cells in the "Effluent Volume" column if there is no flow totalizer.)
- 6.4.9.1 If there is a flow totalizer and if this is the first sample at this location, visually check the volume totalizer display reading.
- 6.4.9.2 If there is a flow totalizer and if this is the first sample at this location, record the totalizer display reading on the Non-PA Effluent Traveler and Chain of Custody Sheet.
- 6.4.9.3 If there is a flow totalizer and if this is the first sample at this location, press the volume totalizer reset button to zero the volume totalizer display.

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- 6.4.10 Inspect associated tubing, piping, and valving for possible maintenance problems.
- 6.4.11 Make notations on the Non-PA Effluent Traveler and chain of Custody Sheet of number of samples collected and any abnormal occurrences during sample collection. Example: volume totalizer sticking, maintenance requirements, safety related problems, sampler inaccessibility, etc.
- 6.4.12 Go to the next sample location/building, if any, and repeat steps 6.2.4 to 6.2.15 and the supporting section 6.4.
- 6.4.13 Review the Non-PA Effluent Traveler and Chain of Custody Sheets (see Attachment 5) for accuracy and completeness.
- 6.4.14 If revisions in the sheets are necessary draw a single line through the incorrect information and record the correct information, then initial and date the change.
- 6.4.15 Sign and date the sheets to verify the accuracy of the sheets per the requirements of this procedure to this point.
- 6.4.16 Go to section 6.5.

6.5 Sample Disposition

The steps below shall be followed when dispositioning samples:

- 6.5.1 After all filters for the route have been collected, deliver the samples to the Radiological Health Laboratory receiving station, along with the appropriate Effluent Traveler and Chain of Custody Sheets.
- 6.5.2 Discuss with the Radiological Health Laboratory personnel the number of samples collected by sampler location.
- 6.5.3 Have the Radiological Health Laboratory personnel print his/her name then sign and date the first page of the appropriate Effluent Traveler and Chain of Custody Sheet verifying that they have received the exact number of samples as recorded on the appropriate Effluent Traveler and Chain of Custody Sheet.
- 6.5.4 Pick up empty sample tube carriers and brass rings from previous sample collections.
- 6.5.5 Make three copies of the appropriate Effluent Traveler and Chain of Custody Sheet.
- 6.5.6 Leave one copy with the Radiological Health Laboratory personnel, place one copy in the EMAT file cabinet, send one copy to the EM Department Document Custodian, and give the original to the EMD Program Manager.

6.5.7 Return empty sample tube carriers and brass rings to the supply storage area.

7.0 Authentication

The signatures on the PA and/or non-PA Effluent Traveler and Chain of Custody Sheet for PA and non-PA sampling locations will be used to track the movement of effluent air radioparticulate samples collected in PA (see Attachments 3 and 4) and non-PA sampling locations (see Attachment 5). The signatures on the sheets verify accurate completion of the critical portions of procedure.

EG&G ROCKY FLATS PLANT
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MANUAL

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Attachment 1
PA Sampling Locations

Exhaust System I.D.	Collection Frequency →		Analytical Frequency →				Pu	Am	U	Be
	n	FPS	H-J	TLL-a	H-J					
371-N01 (371-123)	3	MoTh	-	MoTh	-	(MC)	(MC)	(MC)	(MC)	
371-N02 (371-456)	3	MoTh	-	MoTh	-	(MC)	(MC)	(MC)	(MC)	
371-SSS (371-789)	3	MoTh	-	MoTh	-	(MC)	(MC)	(MC)	(MC)	
374-MAI (374-123)	3	MoTh	-	MoTh	-	(MC)	(MC)	(MC)	(MC)	
374-SPO (374-456)	3	MoTh	-	MoTh	-	(MC)	(MC)	(MC)	(MC)	
353-561	34	MoTh	-	MoTh	-	(MC)	(MC)	(MC)	(MC)	
707-101	2	MoTh	-	MoTh	-	(MC)	(MC)	(MC)	(MC)	
707-102	2	MoTh	MWF	MoTh	MWF	(MC)	(MC)	(MC)	(MC)	
707-105	3	MoTh	-	MoTh	-	(MC)	(MC)	(MC)	(MC)	
707-106	2	MoTh	-	MoTh	-	(MC)	(MC)	(MC)	(MC)	
707-107	3	MoTh	-	MoTh	-	(MC)	(MC)	(MC)	(MC)	
707-108	3	MoTh	-	MoTh	-	(MC)	(MC)	(MC)	(MC)	
707-R21	2	MoTh	-	MoTh	-	(MC)	(MC)	(MC)	(MC)	
707-R22	2	MoTh	-	MoTh	-	(MC)	(MC)	(MC)	(MC)	
707-R23	2	MoTh	-	MoTh	-	(MC)	(MC)	(MC)	(MC)	
707-R24	2	MoTh	-	MoTh	-	(MC)	(MC)	(MC)	(MC)	
707-R25	2	MoTh	-	MoTh	-	(MC)	(MC)	(MC)	(MC)	
707-R26	2	MoTh	-	MoTh	-	(MC)	(MC)	(MC)	(MC)	
707-R27	2	MoTh	-	MoTh	-	(MC)	(MC)	(MC)	(MC)	
707-R45	2	MoTh	-	MoTh	-	(MC)	(MC)	(MC)	(MC)	
707-R46	2	MoTh	-	MoTh	-	(MC)	(MC)	(MC)	(MC)	
771-CMA	2	MoTh	-	MoTh	-	(MC)	(MC)	(MC)	(MC)	
771-CRM	2	MoTh	-	MoTh	-	(MC)	(MC)	(MC)	(MC)	
771-MAI	3	MoTh	-	MoTh	-	(MC)	(MC)	(MC)	(MC)	
774-202	2	MoTh	-	MoTh	-	(MC)	(MC)	(MC)	(MC)	
776-201	2	MoTh	-	MoTh	-	(MC)	(MC)	(MC)	(MC)	
776-202	2	MoTh	-	MoTh	-	(MC)	(MC)	(MC)	(MC)	
776-204	3	MoTh	-	MoTh	-	(MC)	(MC)	(MC)	(MC)	
776-205	2	MoTh	MWF	MoTh	MWF	(MC)	(MC)	(MC)	(MC)	
776-206	2	MoTh	MWF	MoTh	MWF	(MC)	(MC)	(MC)	(MC)	
776-207	2	MoTh	-	MoTh	-	(MC)	(MC)	(MC)	(MC)	

MC = Monthly Composite

Numbers in parentheses following the "Exhaust System I.D." are the Sample "Location" Numbers specified on the Effluent Traveler and Chain of Custody Form.

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Attachment 1 (continued)

PA Sampling Locations

Exhaust System	Collection Frequency		Analytical Frequency					
776-250	4	MoTh	MWF	MoTh	MWF	(MC)	(MC)	(MC) (MC)
776-251	3	MoTh	MWF	MoTh	MWF	(MC)	(MC)	(MC) (MC)
776-252	2	MoTh	-	MoTh	-	(MC)	(MC)	(MC) (MC)
778-LOY	2	MoTh	-	MoTh	-	(MC)	(MC)	(MC) (MC)
779-729	2	MoTh	-	MoTh	-	(MC)	(MC)	(MC) (MC)
779-782	3	MoTh	MWF	MoTh	MWF	(MC)	(MC)	(MC) (MC)
991-985	3	MoTh	-	MoTh	-	(MC)	(MC)	(MC) (MC)
(985-123)								
991-MAI	3	MoTh	-	MoTh	-	(MC)	(MC)	(MC) (MC)
(991-A8C)								

MC = Monthly Composite

*Numbers in parentheses following the "Exhaust System I.D." are the Sample "Location" Numbers specified on the Effluent Traveler and Chain of Custody Form.

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Attachment 2
Non-PA Sampling Locations

Exhaust System I.D.	Collection Frequency		Analytical Frequency						
	n	FPS	H-3	TLL-a	H-3	Pu	Am	U	9a
444-005	1	TuFr	-	TuFr	-	(MC)	(MC)	(MC)	(MC)
444-MA1	3	TuFr	-	TuFr	-	(MC)	(MC)	(MC)	(MC)
447-MA1	3	TuFr	-	TuFr	-	(MC)	(MC)	(MC)	(MC)
865-EEE	3	TuFr	-	TuFr	-	(MC)	(MC)	(MC)	(MC)
865-WWW	3	TuFr	-	TuFr	-	(MC)	(MC)	(MC)	(MC)
881-MA1	3	TuFr	-	TuFr	-	(MC)	(MC)	(MC)	(MC)
(881-NE)									
881-MA2	3	TuFr	-	TuFr	-	(MC)	(MC)	(MC)	(MC)
(881-NW)									
881-MA3	3	TuFr	-	TuFr	-	(MC)	(MC)	(MC)	(MC)
(881-SW)									
881-MA4	3	TuFr	-	TuFr	-	(MC)	(MC)	(MC)	(MC)
(881-SE)									
883-AAA	3	TuFr	-	TuFr	-	(MC)	(MC)	(MC)	(MC)
(883-123)									
883-888	3	TuFr	-	TuFr	-	(MC)	(MC)	(MC)	(MC)
(883-456)									
883-CCC	3	TuFr	-	TuFr	-	(MC)	(MC)	(MC)	(MC)
886-875	3	TuFr	-	TuFr	-	(MC)	(MC)	(MC)	(MC)
889-MA1	1	TuFr	-	TuFr	-	(MC)	(MC)	(MC)	(MC)

MC = Monthly Composite

Numbers in parentheses following the "Exhaust System I.D." are the Sample "Location" Numbers specified on the Effluent Traveler and Chain of Custody Form.

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PA Effluent Traveler and Chain of Custody Sheet
Route EA

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Datasheet # EICC

Location	Route Sequence	Sampler Number	Effluent Volume	Date		Comments	Samples Received in Lab
				On	Off		
371-N01	EA1	371-1	-----				
	EA2	371-2	-----				
	EA3	371-3	-----				
371-N02	EA4	371-4	-----				
	EA5	371-5	-----				
	EA6	371-6	-----				
371-B35	EA7	371-7	-----				
	EA8	371-8	-----				
	EA9	371-9	-----				
371-M01	EA10	374-1	-----				
	EA11	374-2	-----				
	EA12	374-3	-----				

Completed and Verified By:

Name

Signature

Date

Samples Received By:

Name

Signature

Date

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PA Effluent Traveler and Chain of Custody Sheet
Route EA

Datasheet # EICC

Location	Route Sequence	Sampler Number	Effluent Volume	Data		Comments	Samples Received in Lab
				On	Off		
374-456	EW13	374-4					
	EA14	374-5	-----				
	EA15	374-6	-----				
771-CMA	EA16	771-1					
	EA17	771-2	-----				
771-CRM	EA18	771-3					
	EA19	771-4	-----				
774-202	EA20	774-1					
	EA21	774-2	-----				
771-MA2	EA22	771-1					
	EA23	771-2	-----				
	EA24	771-3	-----				
707-107	EA25	707-1					
	EA26	707-2	-----				
	EA27	707-3	-----				

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PA Effluent Traveler and Chain of Custody Sheet
Route EA

Datasheet # EICC

Location	Route Sequence	Sampler Number	Effluent Volume	Date		Comments	Samples Received in Lab
				On	Off		
707-108	EA28	707-4					
	EA29	707-5	----				
	EA30	707-6	----				
707-109	EA31	707-7					
	EA32	707-8	----				
707-109	EA33	707-9					
	EA34	707-10	----				
	EA35	707-11	----				
707-109	EA36	707-12					
	EA37	707-13	----				
707-109	EA38	707-14					
	EA39	707-15	----				
707-109	EA40	707-16					
	EA41	707-17	----				
707-109	EA42	707-18					

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PA Effluent Traveler and Chain of Custody Sheet
Route EA

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Datasheet # EICC-

Location	Range Sequence	Sample Number	Effluent Volume	Date		Comments	Samples Received in Lab
				On	Off		
707-R21	EA43	707-10	-----				
	EA44	707-20					
	EA45	707-21	-----				
707-R22	EA46	707-22					
	EA47	707-23	-----				
707-R23	EA48	707-24					
	EA49	707-25	-----				
707-R24	EA50	707-26					
	EA51	707-27	-----				
707-R25	EA52	707-28					
	EA53	707-29	-----				
707-R26	EA54	707-30					
	EA55	707-31	-----				
707-R27	EA56	707-32					
	EA57	707-33	-----				

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Attachment 4
PA Effluent Traveler and Chain of Custody Sheet
Route EB

Datasheet of FISC

Location	Route Sequence	Sampler Number	Effluent Volume	Date		Comments	Samples Received in Lab
				On	Off		
776-250	EB1	776-1					
	EB2	776-2				
	EB3	776-3				
	EB4	776-4				
776-201	EB5	776-5					
	EB6	776-6				
776-201	EB7	776-7					
	EB8	776-8				
	EB9	776-9				
776-202	EB10	776-10					
	EB11	776-11				
776-207	EB12	776-12					

Completed and Verified By:

Name

Signature

Date

Samples Received By:

Name

Signature

Date

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Attachment 4
PA Effluent Traveler and Chain of Custody Sheet
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Worksheet 1

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Location	Route Sequence	Sample Number	Effluent Volume	Date		Comments	Samples Received In Lab
				On	Off		
776-205	EB13	776-13					
	EB14	776-14					
	EB15	776-15					
776-200	EB16	776-16					
	EB17	776-17					
776-261	EB18	776-18					
	EB19	776-19					
	EB20	776-20					
776-UDY	EB21	776-21					
	EB22	776-22					
858-601	EB23	560-1					
	EB24	660-2					
	EB25	559-3					
	EB26	777-1					
	EB27	777-2					

SEE PCN AP.03-92-01, ITEM 15

--- EB25 X 559-4

777-252 EB26 777-1

--- EB27 777-2

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Attachment 1
PA Efficient Traveler and Chain of Custody Sheet
Route 111

1. How many

2011-12-19

Location	Route Sequence	Sampler Number	Effluent Volume	Date		Comments	Samples Received In Lab
				On	Off		
779 702	ED20-1	779-1					
	ED20	779-2					
	ED30	779-3					
779 720	ED31	779-4					
	ED32	779-5					
991 005	ED33	991-1					
	ED34	991-2	EB 35				
	ED35	991-3	EB 36				
991 001	ED36	991-4					

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Attachment 5

WPA Effluent Traveler and Chain of Custody Sheet
Route EC

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Datasheet # EICC

Location	Route Sequence	Sampler Number	Effluent Volume	Date		Comments	Samples Received In Lab
				On	Off		
447-MA	EC1	447-1	-----				
---	EC2	447-2	-----				
---	EC3	447-3	-----				
447-MA	EC4	447-4	-----				
---	EC5	447-5	-----				
---	EC6	447-6	-----				
447-DOF	EC7	447-7	-----				
883-AAA	EC8	883-1	-----				
---	EC9	883-2	-----				
---	EC10	883-3	-----				
883-080	EC11	883-4	-----				

Completed and Verified By:

Name

Signature

Date

Samples Received By:

Name

Signature

Date

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Attachment 5

AP-PA Effluent Traveler and Chain of Custody Sheet
Route EC

Datasheet # EICC-

Location	Route Sequence	Sampler Number	Effluent Volume	Date		Comments	Samples Received In Lab
				On	Off		
---	EC12	883-5	---				
---	EC13	883-6	---				
881-CCC	EC14	883-7	---				
---	EC15	883-8	---				
---	EC16	883-9	---				
889-MA	EC17	883-10	---				
881-NE	EC18	883-11	---				
---	EC19	883-12	---				
---	EC20	883-13	---				
881-NW	EC21	883-14	---				
---	EC22	883-15	---				
---	EC23	883-16	---				
881-SW	EC24	883-17	---				
---	EC25	883-18	---				
---	EC26	883-19	---				

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Attachment 5

PA Effluent Traveler and Chain of Custody Sheet
Route EC

Dataset # EYCC.

Location	Route Sequence	Sampler Number	Effluent Volume	Date		Comments	Samples Received In Lab
				On	Off		
001 SE	EC27	001-10					
	EC28	001-11	-----				
	EC28	001-12	-----				
006 YWW	EC30	006-1					
	EC31	006-2	-----				
	EC32	006-3	-----				
006 FEE	EC33	006-4					
	EC34	006-5	-----				
	EC35	006-6	-----				
006-075	EC36	075-1					
	EC37	075-2					
	EC38	075-3					

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